

| STUDY MODULE DESCRIPTION FORM | | |
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| Name of the module/subject Diagnostics and studies of sanitary systems | | Code 1010134291010105186 |
| Field of study Environmental Engineering Extramural First- | Profile of study (general academic, practical) (brak) | Year /Semester 5 / 9 |
| Elective path/specialty - | Subject offered in: Polish | Course (compulsory, elective) elective |
| Cycle of study: First-cycle studies | Form of study (full-time, part-time) part-time | |
| No. of hours Lecture: 20 Classes: 10 Laboratory: - Project/seminars: - | | No. of credits 3 |
| Status of the course in the study program (Basic, major, other) (brak) | | (university-wide, from another field) (brak) |
| Education areas and fields of science and art | | ECTS distribution (number and %) |
| Responsible for subject / lecturer: dr inż. Julian Skiba email: julian.skiba@put.poznan.pl tel. 61 6652078 Faculty of Civil and Environmental Engineering ul. Berdychowo 4 60-965 Poznań | | Responsible for subject / lecturer: dr inż. Julian Skiba email: julian.skiba@put.poznan.pl tel. 61 6652078 Faculty of Civil and Environmental Engineering ul. Piotrowo 5 60-965 Poznań |
| Prerequisites in terms of knowledge, skills and social competencies: | | |
| 1 | Knowledge | Knowledge of technical solutions , principles and requirements for water , sewage and gas systems |
| 2 | Skills | Design and operation of basic measuring devices used in environmental engineering laboratory known during the course of fluid mechanics , chemistry and biology |
| 3 | Social competencies | Awareness of the need to constantly update and supplement knowledge based on industry literature , conference materials and the acquisition of skills in bringing it to the practice of engineering |
| Assumptions and objectives of the course: Getting to know the requirements for water , sewage and gas systems in the light of legal acts and engineering knowledge The ability to select design and operating parameters for the evaluation of sanitary installations for correct operation Familiarize yourself with the basic instruments and measurement systems for measuring parameters of the water , sewage and gas systems | | |
| Study outcomes and reference to the educational results for a field of study | | |
| Knowledge: 1. The student knows the requirements for assessing the operation of water , sewage and gas systems - [-] 2. The student knows the basic parameters characterizing the correct operation of an installation - [-] | | |
| Skills: 1. The student can choose what operating parameters , select the installation to assess the correctness of its actions - [-] 2. The student is able to choose and install a device for measuring the parameters of the installation determine its proper operation - [-] | | |
| Social competencies: 1. Awareness of the need to constantly update and supplement knowledge based on industry literature , conference materials and the acquisition of skills in bringing it to the practice of engineering - [-] | | |
| Assessment methods of study outcomes | | |

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| <p>Evaluation criteria: more than 100 points excelled 91?100 very good (A) 81? 90 good plus (B) 71? 80 good (C) 61? 70 satisfactory plus (D) 51? 60 satisfactory (E) 50 and below inadequate (F)</p> | | |
| Course description | | |
| <p>The basic parameters for the assessment of the proper operation of water and sewage systems Research and requirements for system components The instrument used for measuring and recording the pressure and flow in systems Measurement of pressure and flow of water in water system of household ,multifamily and industrial buildings Leak testing of water and sewage system The study of energy efficiency pumps and pumping systems Sewer Inspections TV Pressure and flow test of hydrants Measurements of pressure during the water hammer Noise level measurements</p> | | |
| Basic bibliography: | | |
| <ol style="list-style-type: none"> 1. x 2. Chudzicki J., Sosnowski St: Instalacje Wodociągowe , Wydawnictwo ?Seidel-Przywecki? Sp. z o.o., Warszawa 2009 3. Chudzicki J, Sosnowski St.: Instalacje Kanalizacyjne , Wydawnictwo ?Seidel-Przywecki? Sp. z o.o., Warszawa 2009 4. Barczyński A., Instalacje gazowe z miedzi Wyd. POLCEN, W-wa 1998 5. Switalski P. ABC techniki pompowej. Wyd. ZPiP CEDOS Sp. z o.o. Wrocław 2008 6. 7. 8. 9. | | |
| Additional bibliography: | | |
| <ol style="list-style-type: none"> 1. Zbiór PN dotyczących wymagań i badania elementów instalacji oraz instalacji jako całości 2. Zbiór PN dotyczących wymagań i badania elementów instalacji oraz instalacji jako całości | | |
| Result of average student's workload | | |
| Activity | Time (working hours) | |
| 1. Participation in lectures | 20 | |
| 2. Participation in the exercises auditorium | 10 | |
| 3. Prepare to complete the course | 15 | |
| Student's workload | | |
| Source of workload | hours | ECTS |
| Total workload | 45 | 3 |
| Contact hours | 30 | 0 |
| Practical activities | 15 | 0 |